BBMP

BRUHAT BANGALORE MAHANAGAR PALIKE

TEST REPORTS

SECOND &FINAL BILL

IMPROVEMENTS TO ROADS, DRAINS AND OTHER DEVELOPMENTAL WORKS

PACKAGE - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Wardno- 03 of Yelahanka New town Sub division. (PACKAGE NO-08).

Nandi Consultants

BBMP/YNK/Pkg 8/2022-23/070A

Date: 29.09.2022

To,

The Executive Engineer,
Yelahanka Division,
Bruhat Bengaluru Mahanagara Palike (BBMP),
Bangalore – 560064

FREQUENCY AND QUALITY REPORT

Sub: Regarding Quality Report for the below mentioned work.

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward No-03 of Yelahanka New town Sub division. (PACKAGE NO-08).

Sl. NO.	Description of Work	Unit	Quantity	No of samples tested	Standards
1	Providing and laying plain/reinforced cement concrete for side drains walls & bottom thickness 15cm using M20 nominal mix concrete	Cum	281.13	6	Per 50 Cum
2	Constructing un-reinforced, plain cement concrete for pavements using Grade concrete M30	Cum	70.11	2	Per 50 Cum
3	Providing TMT Bars Fe 500 steel reinforcement for RCC	MT	15.89	3	Per Dia of steel
4	Construction of Granular Sub-Base Grading V as sub base and drainage layer	Cum	3298.68	8	Per 400Cum
5	Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to wet mix macadam	Cum	4398.23	22	Per 200Cum
6	Providing and laying dense graded bituminous macadam	Cum	1202.40	20	Two Tests per day
7	Providing and laying bituminous concrete	Cum	961.94	20	Two Tests per day

With respect to the above subject & name of the work, we have inspected the work and the Quantity and Quality of above mentioned items of the work was found to be completed satisfactorily for the 2nd and Final bill.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-೦೬

For Nandi Consultants,

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Date: 12-05-2022

TEST REPORT ON MECHANICAL PROPERTIES OF COARSE AGGREGATES

Name of Client: Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Location: Munivenkatappa Layout (Doddabettahalli)

Sample Identification: 20mm down size Coarse Aggregate

Sampling : Sample collected from the site and Tested

Reference to BIS codes: **Test Method:**

IS 2386 (Part 1) : 1963 (RA 2016) Particle Size And Shape Cl 2

IS 2386 (Part 3) : 1963 (RA 2016) Specific gravity, density, voids, absorption and bulking

IS 2386 (Part 4) : 1963 (RA 2016) Mechanical Properties

Specification

IS 383 : 2016 Coarse And Fine Aggregate For Concrete

Condition of sample: Satisfactory

Date of test: 4-5-2022 to 10-05-2022

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM COARSE AGGREGATE:

Total weight taken: 5000 grams

Sl.No	Sieve Designation	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Requirement as per IS 383: 2016 Table-7 (Cl 6.1 & 6.2)	
						Graded	Single-Sized
1	40 mm	0	0	0	100	100	100
2	20 mm	330	330	6.6	93.4	90-100	85-100
3	10 mm	2581	2911	58.22	41.78	25-55	0-20
4	4.75 mm	1723	4634	92.68	7.32	0-10	0-5
5	Pan	366	5000	100	0	---	---

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

M/s. NANDI CONSULTANTS * SHIMOGA. *

MECHANICAL PROPERTIES

Sl.No	Tests	Result	Requirements as per IS 383 : 2016
1	Flakiness Index (%)	15.90	Combined flakiness & elongation index shall not exceed 40 % for uncrushed or crushed aggregate
2	Elongation Index (%)	19.50	
3	Specific Gravity	2.77	–
4	Water Absorption (%)	0.50	–
5	Aggregate crushing strength (%)	25	For Aggregates to be used in concrete for wearing surfaces, (such as runways, roads, pavements, tunnel lining carrying water, spillways and stilling basins): Max 30 %
6	Aggregate Impact Value (%)	24	For Aggregates to be used in concrete for wearing surfaces, (such as runways, roads, pavements, tunnel lining carrying water, spillways and stilling basins): Max 30 % For Aggregates to be used in concrete other than for wearing surfaces: Max 45 %

Remarks:-

The tested sample is found to be satisfactory as it meets the requirements of the IS 383 : 2016 Specification/Project Requirement with respect to above tests conducted, where as the gradation conforms to Graded aggregate.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಬಿ.ಡಿ.ಎ. ಬೆಂಗಳೂರು-106

Checked by:

M/s. NANDI CONSULTANTS * SHIMOGA *

Nandi Consultants

Date: 12-05-2022

TEST REPORT ON PHYSICAL PROPERTIES OF FINE AGGREGATE

Name of Client: Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Receipt: 4-5-2022

Location: Munivenkatappa Layout (Doddabettahalli)

Sampling : Sample collected from the site and Tested

Sample Identification*: M-Sand

Reference to BIS code Test Method:

IS 2386 (Part 1) : 1963 (RA 2016) Particle Size And Shape Cl.2

IS 2386 (Part 3) : 1963 (RA 2016) Specific gravity, density, voids, absorption and bulking

IS 2386 (Part 4) :1963 (RA 2016) Mechanical Properties

Specification:

IS 383 : 2016 Coarse and fine aggregate for concrete

Condition of sample: Satisfactory

Date of test: 4-5-2022 to 10-05-2022

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF FINE AGGREGATE:

Total weight taken: 1000 grams

SL.No	Sieve Designation	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383 : 2016 Table-9, (Cl-6.3)				Remarks
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV	
1	10 mm	0	0	0	100	100	100	100	100	The tested Sample confirms to Grading Zone- II
2	4.75 mm	51	51	5.1	94.9	90-100	90-100	90-100	95-100	
3	2.36 mm	126	177	17.7	82.3	60-95	75-100	85-100	95-100	
4	1.18 mm	197	374	37.4	62.6	30-70	55-90	75-100	90-100	
5	600 micron	187	561	56.1	43.9	15-34	35-59	60-79	80-100	
6	300 micron	179	740	74.0	26	5-20	8-30	12-40	15-50	
7	150 micron	195	935	93.5	6.5	0-10	0-10	0-10	0-15	
8	Pan	65	1000	100.0	0	---	---	---	---	

ಸಹಾಯಕ ಆಯುಕ್ತರು ಮತ್ತು ಅಧಿಕಾರಿಗಳು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-10

M/s. NANDI CONSULTANTS * SHIMOGA *

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date: 07-05-2022

TEST REPORT ON MECHANICAL PROPERTIES OF REINFORCEMENT STEEL

Name of Client: Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Receipt: 04-05-2022

Location: Munivenkatappa Layout (Doddabettahalli)

Sampling : Sample collected from the site and Tested

Reference to BIS code Test Method:

IS 1608 (Part 1) : 2018, Metallic Materials, Tensile Testing, Method of Test at Room Temperature

IS 1786 : 2008 (RA 2018) High strength deformed steel bars and wires for concrete reinforcement - Bend & Rebend Test

Specification:

IS 1786 : 2008 (RA 2018) High strength deformed steel bars and wires for concrete reinforcement

Condition of sample: Satisfactory

Date of test: 05-05-2022 to 06-05-2022

Sl. No	Sample Identification	Sample ID No	Nominal size (dia in mm)	Mass per meter (kg/meter)	TENSILE STRENGTH				Bend Test	Re Bend Test
					0.20 % proof stress/ yield stress (N/mm^2)	Tensile strength (N/mm^2)	TS/YS ratio	Elongation percent on gauge length		
1	RD TMT Fe 550	1/1a	08	0.395	575	627	1.09	16.80	–	–
	RD TMT Fe 550	1/1b	08	0.396	–	–	–	–	No Rupture or Crack Visible	–
	RD TMT Fe 550	1/1c	08	0.399	–	–	–	–	–	No Rupture or Crack Visible

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ.
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

M/s. NANDI CONSULTANTS * SHIMOGA *

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date : 19-06-2022

TEST REPORT OF GRADATION FOR GSB

Name of Client: Executive Engineer Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Sample Collection: 18-06-2022

Chainage/Location/Land Mark: Sample collected & Tested at site (Munivenkatappa Layout, 1st Cross)

Date of testing: 18-06-2022

Reference to BIS codes: IS 2386 (Part 1) 1963 (RA 2016) Particle Size and Shape Cl 2

Layer: GSB

Wt of sample taken (gm): 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	As per MORTH 5th Revsion Table 400.1 (Garding V)
1	75	0	0	0.00	100.00	100
2	53	836	836	8.36	91.64	80-100
3	26.5	2301	3137	31.37	68.63	55-90
4	9.5	2038	5175	51.75	48.25	35-65
5	4.75	1385	6560	65.60	34.40	25-50
6	2.36	2010	8570	85.70	14.30	10-20
7	0.85	775	9345	93.45	6.55	2-10
8	0.425	258	9603	96.03	3.97	0-5
9	pan	397	10000	100.00	0.00	-

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/s. NANDI CONSULTANTS * SHIMOGA. *

Checked by:

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date : 21-06-2022

TEST REPORT OF GRADATION FOR GSB

Name of Client: Executive Engineer Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Sample Collection: 20-06-2022

Chainage/Location/Land Mark: Sample collected & Tested at site (Jyoti Nagara, 2nd Cross)

Date of testing: 20-06-2022

Reference to BIS codes: IS 2386 (Part 1) 1963 (RA 2016) Particle Size and Shape Cl 2

Layer: GSB

Wt of sample taken (gm): 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	As per MORTH 5th Revsion Table 400.1 (Garding V)
1	75	0	0	0.00	100.00	100
2	53	412	412	4.12	95.88	80-100
3	26.5	2283	2695	26.95	73.05	55-90
4	9.5	2005	4700	47.00	53.00	35-65
5	4.75	848	5548	55.48	44.52	25-50
6	2.36	2733	8281	82.81	17.19	10-20
7	0.85	1020	9301	93.01	6.99	2-10
8	0.425	450	9751	97.51	2.49	0-5
9	pan	249	10000	100.00	0.00	-

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/s. NANDI CONSULTANTS * SHIMOGA. *

Checked by:

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD

Name of Client: Bruhat Bangalore Mahanagara Palike

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Job Code: 003-22-000009

Source of sample Tested at site

Layer: GSB

Date of testing: 20.06.2022

Max.Dry Density (S) (g/cc)	2.10
Optium Moisture Content (%)	8.50
Bulk Density of Sand (Q)(g/cc)	1.44
Wt. of Sand in Cones (A) gms	870

DETERMINATION OF WET DENSITY

Test Holes No's	1	2	3	4	5
Location/Land Mark	Munivenkatappa Layout, 1st Cross	Munivenkatappa Layout, 2nd Main	Rajiv Gandhi Nagara, 2nd Cross	Jyoti Nagara, 2nd Cross	Jyoti Nagara, 3rd Cross
Chainage	16.1	18.2	55.1	96.1	75.8
Wt.of Wet material from hole (gm) (B)	9328	9363	9225	9204	9288
Wt.of Cylinder+Sand before pouring (gm) (c)	16850	16850	16850	16850	16850
Wt.of Cylinder+Sand after pouring (gm) (D)	7522	7487	7625	7646	7562
Wt.of Sand in Hole & Cone (gm) (E)	6870	6860	6846	6860	6810
Wt.of Sand in Hole (gm) (F=E-A)	6000	5990	5976	5990	5940
Volume of Sand in Hole (G=F/Q)	4167	4160	4150	4160	4125
Wet Density of Material (g/cc) (H=B/G)	2.24	2.25	2.22	2.21	2.25
Moisture Content (%)	7.5	7.5	7	7.5	8

DETERMINATION OF DRY DENSITY

Field dry Density (g/cc)	2.08	2.09	2.08	2.06	2.08
Field compaction achieved (%)	99.17	99.71	98.93	98.01	99.28
Required Compaction (%)	98.00	98.00	98.00	98.00	98.00

Checked By

M/S NANDI CONSULTANTS

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD

Name of Client: Bruhat Bangalore Mahanagara Palike

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Job Code: 003-22-000009

Source of sample Tested at site

Layer: GSB

Date of testing: 22.06.2022

Max.Dry Density (S) (g/cc)	2.10
Optium Moisture Content (%)	8.50
Bulk Density of Sand (Q)(g/cc)	1.44
Wt. of Sand in Cones (A) gms	870

DETERMINATION OF WET DENSITY

Test Holes No's	1	2	3	4	5
Location/Land Mark	in front of Vruksha Restaurant	in front of Vruksha Restaurant	AlHajSyedYakhub Sab Layout cubcross	Munivenkatappa Layout, 3rd Cross	Munivenkatappa Layout, 3rd Main
Chainage	57.2	216.2	27.5	37.1	8.5
Wt.of Wet material from hole (gm) (B)	9221	9223	9264	9220	9236
Wt.of Cylinder+Sand before pouring (gm) (c)	16850	16850	16850	16850	16850
Wt.of Cylinder+Sand after pouring (gm) (D)	7629	7627	7586	7630	7614
Wt.of Sand in Hole & Cone (gm) (E)	6841	6894	6862	6855	6865
Wt.of Sand in Hole (gm) (F=E-A)	5971	6024	5992	5985	5995
Volume of Sand in Hole (G=F/Q)	4147	4183	4161	4156	4163
Wet Density of Material (g/cc) (H=B/G)	2.22	2.20	2.23	2.22	2.22
Moisture Content (%)	7.5	6.5	8	6.5	6.5

DETERMINATION OF DRY DENSITY

Field dry Density (g/cc)	2.07	2.07	2.06	2.08	2.08
Field compaction achieved (%)	98.51	98.58	98.16	99.19	99.19
Required Compaction (%)	98.00	98.00	98.00	98.00	98.00

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-106

Checked By

M/S. NANDI CONSULTANTS * SHIMOGA *

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160001

Nandi Consultants

Nandi Consultants

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD

Name of Client: Bruhat Bangalore Mahanagara Palike

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Job Code: 003-22-000009

Source of sample Tested at site

Layer: GSB

Date of testing: 23.06.2022

Max.Dry Density (S) (g/cc)	2.10
Optium Moisture Content (%)	8.50
Bulk Density of Sand (Q)(g/cc)	1.44
Wt. of Sand in Cones (A) gms	870

DETERMINATION OF WET DENSITY

Test Holes No's	1	2	3	4	5
Location/Land Mark	Ambedkar Park Beside road	Amba Bavani Road, Sashank Florento	Amba Bavani Road, Sashank Florento	Amba Bavani Road, Sashank Florento	Amba Bavani Road, Sashank Florento
Chainage	66	97.5	227.9	454.2	602.4
Wt.of Wet material from hole (gm) (B)	9210	9288	9224	9248	9248
Wt.of Cylinder+Sand before pouring (gm) (c)	16850	16850	16850	16850	16850
Wt.of Cylinder+Sand after pouring (gm) (D)	7640	7562	7626	7602	7602
Wt.of Sand in Hole & Cone (gm) (E)	6812	6885	6819	6835	6822
Wt.of Sand in Hole (gm) (F=E-A)	5942	6015	5949	5965	5952
Volume of Sand in Hole (G=F/Q)	4126	4177	4131	4142	4133
Wet Density of Material (g/cc) (H=B/G)	2.23	2.22	2.23	2.23	2.24
Moisture Content (%)	6.5	8	7	6.5	7

DETERMINATION OF DRY DENSITY

Field dry Density (g/cc)	2.10	2.06	2.09	2.10	2.09
Field compaction achieved (%)	99.80	98.04	99.37	99.82	99.57
Required Compaction (%)	98.00	98.00	98.00	98.00	98.00

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ.
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

Checked By

M/S. NANDI CONSULTANTS SHIMOGA

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

DETERMINATION OF FLAKINESS AND ELONGATION INDEX

Name of Client:	Bruhat Bangalore Mahanagara Palike
Address:	Yelahanka Division
Package No:	Package - 08
Name of Work:	Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no-03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor:	SRI SAI CONSTRUCTION
Name of PMC:	Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of sample Collection:	22-06-2022
Chainage/Location/ Landmark:	Sample collected from the site and Tested (Munivenkatappa Layout, 2nd Main)
Date of Testing:	22-06-2022
Reference to IS Code:	IS 2386 (Part 1) 1963(RA 2016)
Layer:	WMM

Size of Aggregates		Flakiness Index						Elongation Index				
Passing through IS sieves	Retained on IS sieves	Thickness gauge size	Weight of aggregate taken in each fraction	Fraction retained in the whole sample	Weight of aggregate in each fraction passing the thickness gauge.	Percent passing the gauge (100*(6/4)	Flakiness Index (7 * 5)	Length gauge size	Weight of aggregate taken in each fraction	Weight of aggregate in each fraction retained on length gauge	Percenet NOT passing the gauge (100*(11/10)	Elongation Index (5 * 12)
(mm)	(mm)	(mm)	(grams)	(Percent)	(grams)			(mm)	(grams)	(grams)		
1	2	3	4	5	6	7	8	9	10	11	12	
63	50	33.90						--				
50	40	27.00						81.00				
40	31.5	21.50	3248	25.43	179	5.51	140.13	64.40	3248	76	2.34	75.08
31.5	25	16.95	2652	20.76	129	4.86	100.99	--	--	--	--	
25	20	13.50	2015	15.77	236	11.71	184.75	40.50	2015	175	8.68	172.89
20	16	10.80	1869	14.63	359	19.21	281.04	32.40	1869	184	9.84	181.78
16	12.5	8.55	1261	9.87	180	14.27	140.91	25.60	1261	280	22.20	276.63
12.5	10	6.75	921	7.21	129	14.01	100.99	20.20	921	269	29.21	265.76
10	6.3	4.89	808	6.33	79	9.78	61.84	14.70	808	173	21.41	170.91
		TOTAL:	12774	100	1291	79.35	1010.65	TOTAL:	10122	1157.00	93.69	1143.05

Flakiness Index: 10.11 %

Elongation Index: 11.43 %

Combined Flakiness & Elongation Index: 22 %

The tested sample is found to be Satisfactory as it meets the requirements of MORTH specification/Project Requirement

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಪಾ.ಬಾ.ಮ.ಪ. ಬೆಂಗಳೂರು-106

M/s. NANDI CONSULTANTS SHIMOGA

Checked By:

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

DETERMINATION OF FLAKINESS AND ELONGATION INDEX

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no-03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of sample Collection: 23-06-2022
Chainage/Location/ Landmark: Sample collected from the site and Tested (Munishwara Layout, 9th Main 3rd Cross)
Date of Testing: 23-06-2022
Reference to IS Code: IS 2386 (Part 1) 1963(RA 2016)
Layer: WMM

Size of Aggregates		Flakiness Index						Elongation Index				
Passing through IS sieves	Retained on IS sieves	Thickness gauge size	Weight of aggregate taken in each fraction	Fraction retained in the whole sample	Weight of aggregate in each fraction passing the thickness gauge.	Percent passing the gauge (100*(6/4)	Flakiness Index (7 * 5)	Length gauge size	Weight of aggregate taken in each fraction	Weight of aggregate in each fraction retained on length gauge	Percenet NOT passing the gauge (100*(11/10)	Elongation Index (5 * 12)
(mm)	(mm)	(mm)	(grams)	(Percent)	(grams)			(mm)	(grams)	(grams)		
1	2	3	4	5	6	7	8	9	10	11	12	
63	50	33.90						--				
50	40	27.00						81.00				
40	31.5	21.50	3091	24.56	163	5.27	129.52	64.40	3091	88	2.85	87.75
31.5	25	16.95	2557	20.32	128	5.01	101.71	--	--	--	--	
25	20	13.50	2174	17.27	226	10.40	179.58	40.50	2174	160	7.36	159.55
20	16	10.80	1739	13.82	350	20.13	278.11	32.40	1739	177	10.18	176.51
16	12.5	8.55	1225	9.73	174	14.20	138.26	25.60	1225	278	22.69	277.22
12.5	10	6.75	907	7.21	132	14.55	104.89	20.20	907	271	29.88	270.24
10	6.3	4.89	892	7.09	90	10.09	71.51	14.70	892	180	20.18	179.50
		TOTAL:	12585	100	1263	79.65	1003.58	TOTAL:	10028	1154.00	93.14	1150.78

Flakiness Index: 10.04 %
Elongation Index: 11.51 %
Combined Flakiness & Elongation Index: 22 %

The tested sample is found to be Satisfactory as it meets the requirements of MORTH specification/Project Requirement

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಆ.ಬ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-೧೯

M/S. NANDI CONSULTANTS * SHIMOGA *

Checked By:

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

DETERMINATION OF FLAKINESS AND ELONGATION INDEX

Name of Client:	Bruhat Bangalore Mahanagara Palike
Address:	Yelahanka Division
Package No:	Package - 08
Name of Work:	Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no-03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor:	SRI SAI CONSTRUCTION
Name of PMC:	Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of sample Collection:	26-06-2022
Chainage/Location/ Landmark:	Sample collected from the site and Tested (Ambedkar Park Beside road)
Date of Testing:	26-06-2022
Reference to IS Code:	IS 2386 (Part 1):1963(RA 2016)
Layer:	WMM

Size of Aggregates		Flakiness Index						Elongation Index				
Passing through IS sieves	Retained on IS sieves	Thickness gauge size	Weight of aggregate taken in each fraction	Fraction retained in the whole sample	Weight of aggregate in each fraction passing the thickness gauge	Percent passing the gauge (100*(6/4)	Flakiness Index (7 * 5)	Length gauge size	Weight of aggregate taken in each fraction	Weight of aggregate in each fraction retained on length gauge	Percenet NOT passing the gauge (100*(11/10)	Elongation Index (5 * 12)
(mm)	(mm)	(mm)	(grams)	(Percent)	(grams)			(mm)	(grams)	(grams)		
1	2	3	4	5	6	7	8	9	10	11	12	
63	50	33.90						--				
50	40	27.00						81.00				
40	31.5	21.50	3177	24.53	174	5.48	134.37	64.40	3177	85	2.68	82.42
31.5	25	16.95	2636	20.36	135	5.12	104.26	--	--	--	--	
25	20	13.50	2109	16.29	221	10.48	170.67	40.50	2109	160	7.59	155.14
20	16	10.80	1890	14.60	352	18.62	271.84	32.40	1890	190	10.05	184.23
16	12.5	8.55	1281	9.89	187	14.60	144.41	25.60	1281	268	20.92	259.87
12.5	10	6.75	972	7.51	130	13.37	100.39	20.20	972	274	28.19	265.68
10	6.3	4.89	884	6.83	89	10.07	68.73	14.70	884	170	19.23	164.84
		TOTAL:	12949	100	1288	77.74	994.67	TOTAL:	10313	1147.00	88.66	1112.19

Flakiness Index: 9.95 %

Elongation Index: 11.12 %

Combined Flakiness & Elongation Index: 21 %

The tested sample is found to be satisfactory as it meets the requirements of MORTH specification/Project Requirement

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

M/S NANDI CONSULTANTS SHIMOGA

Checked By:

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date : 09.07.2022

TEST REPORT OF GRADATION FOR WET MIX MACADAM

Name of Client: Executive Engineer Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Sample Collection: 27.06.2022

Chainage/Location/ Mark: Sample collected & Tested at site (Munivenkatappa Layout, 2nd Main)

Date of testing: 27.06.2022

BIS Code: IS 2386 (Part 1) 1963 (RA 2016) Particle Size and Shape Cl.2

Layer: WMM

Wt of sample taken (gm): 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits Vide Table 400.13 as Per MORTH Specification
1	53	0	0	0.00	100	100
2	45	219	219	2.19	97.81	95-100
3	22.4	2403	2622	26.22	73.78	60-80
4	11.2	1763	4385	43.85	56.15	40-60
5	4.75	2108	6493	64.93	35.07	25-40
6	2.36	895	7388	73.88	26.12	15-30
7	0.600	692	8080	80.80	19.20	8-22
8	0.075	1658	9738	97.38	2.62	0-5

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ.
ಬ.ಬ.ಮ.ಪ. ಬೆಂಗಳೂರು-106

Checked by:

M/S. NANDI CONSULTANTS SHIMOGA

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date : 09.07.2022

TEST REPORT OF GRADATION FOR WET MIX MACADAM

Name of Client: Executive Engineer Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Sample Collection: 29.06.2022

Chainage/Location/ Mark: Sample collected & Tested at site (Jyoti Nagara, 3rd Cross)

Date of testing: 29.06.2022

BIS Code: IS 2386 (Part 1) 1963 (RA 2016) Particle Size and Shape Cl.2

Layer: WMM

Wt of sample taken (gm) 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits Vide Table 400.13 as Per MORTH Specification
1	53	0	0	0.00	100	100
2	45	218	218	2.18	97.82	95-100
3	22.4	2697	2915	29.15	70.85	60-80
4	11.2	2068	4983	49.83	50.17	40-60
5	4.75	2174	7157	71.57	28.43	25-40
6	2.36	1016	8173	81.73	18.27	15-30
7	0.600	847	9020	90.20	9.80	8-22
8	0.075	857	9877	98.77	1.23	0-5

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಆಯುಕ್ತರಾಲಯ ಅಧಿಕಾರಿಗಳ
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಜಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

Checked by:

M/S NANDI CONSULTANTS SHIMOGA

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date : 09.07.2022

TEST REPORT OF GRADATION FOR WET MIX MACADAM

Name of Client: Executive Engineer Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Sample Collection: 1.07.2022

Chainage/Location/ Mark: Sample collected & Tested at site (Munishwara Layout, 9th Main 3rd Cross)

Date of testing: 1.07.2022

BIS Code: IS 2386 (Part 1) 1963 (RA 2016) Particle Size and Shape Cl.2

Layer: WMM

Wt of sample taken (gm): 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits Vide Table 400.13 as Per MORTH Specification
1	53	0	0	0.00	100	100
2	45	327	327	3.27	96.73	95-100
3	22.4	3098	3425	34.25	65.75	60-80
4	11.2	1693	5118	51.18	48.82	40-60
5	4.75	2200	7318	73.18	26.82	25-40
6	2.36	862	8180	81.80	18.20	15-30
7	0.600	567	8747	87.47	12.53	8-22
8	0.075	1147	9894	98.94	1.06	0-5

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಬಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

Checked by:

M/s. NANDI CONSULTANTS SHIMOGA

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date : 09.07.2022

TEST REPORT OF GRADATION FOR WET MIX MACADAM

Name of Client: Executive Engineer Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Sample Collection: 03.07.2022

Chainage/Location/ Mark: Sample collected & Tested at site (AlHajSyedYakhub Sab Layout subcross)

Date of testing: 03.07.2022

BIS Code: IS 2386 (Part 1).1963 (RA 2016) Particle Size and Shape Cl 2

Layer: WMM

Wt of sample taken (gm) 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits Vide Table 400.13 as Per MORTH Specification
1	53	0	0	0.00	100	100
2	45	284	284	2.84	97.16	95-100
3	22.4	2950	3234	32.34	67.66	60-80
4	11.2	1574	4808	48.08	51.92	40-60
5	4.75	2119	6927	69.27	30.73	25-40
6	2.36	982	7909	79.09	20.91	15-30
7	0.600	583	8492	84.92	15.08	8-22
8	0.075	1146	9638	96.38	3.62	0-5

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

Checked by:

M/s. NANDI CONSULTANTS * SHIMOGA *

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

Date : 09.07.2022

TEST REPORT OF GRADATION FOR WET MIX MACADAM

Name of Client: Executive Engineer Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Date of Sample Collection: 06.07.2022

Chainage/Location/ Mark: Sample collected & Tested at site (Top Root College Main Road)

Date of testing: 06.07.2022

BIS Code: IS 2386 (Part 1) 1963 (RA 2016) Particle Size and Shape Cl 2

Layer: WMM

Wt of sample taken (gm) 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits Vide Table 400.13 as Per MORTH Specification
1	53	0	0	0.00	100	100
2	45	253	253	2.53	97.47	95-100
3	22.4	3120	3373	33.73	66.27	60-80
4	11.2	1574	4947	49.47	50.53	40-60
5	4.75	2100	7047	70.47	29.53	25-40
6	2.36	871	7918	79.18	20.82	15-30
7	0.600	537	8455	84.55	15.45	8-22
8	0.075	1361	9816	98.16	1.84	0-5

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

Checked by:

M/s. NANDI CONSULTANTS

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

DETERMINATION OF FLAKINESS AND ELONGATION INDEX

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of sample Collection: 02-Jul-22
Chainage/Location / Landmark: Sample collected from the site and Tested (Amba Bavani Road, Sashank Florento Apartment Front)
Date of Testing: 02-Jul-22
Reference to IS Code: IS 2386 (Part 1) 1963(RA 2016)
Layer: DBM

Size of Aggregates		Flakiness Index						Elongation Index				
Passing through IS sieves	Retained on IS sieves	Thickness gauge size	Weight of aggregate taken in each fraction	Fraction retained in the whole sample	Weight of aggregate in each fraction passing the thickness gauge.	Percent passing the gauge (100*(6/4)	Flakiness Index (7 * 5)	Length gauge size	Weight of aggregate taken in each fraction	Weight of aggregate in each fraction retained on length gauge	Percenet NOT passing the gauge (100*(11/10)	Elongation Index (5 * 12)
(mm)	(mm)	(mm)	(grams)	(Percent)	(grams)			(mm)	(grams)	(grams)		
1	2	3	4	5	6	7	8	9	10	11	12	
63	50	33.90						--				
50	40	27.00						81.00				
40	31.5	21.50						64.40				
31.5	25	16.95						--				
25	20	13.50	2281	31.37	134	5.87	184.27	40.50	2281	119	5.22	163.64
20	16	10.80	1602	22.03	220	13.73	302.53	32.40	1602	154	9.61	211.77
16	12.5	8.55	1336	18.37	255	19.09	350.66	25.60	1336	212	15.87	291.53
12.5	10	6.75	1226	16.86	187	15.25	257.15	20.20	1226	230	18.76	316.28
10	6.3	4.89	827	11.37	160	19.35	220.02	14.70	827	122	14.75	167.77
		TOTAL:	7272	100	956	73.29	1314.63	TOTAL:	7272	837.00	64.21	1150.99

Flakiness Index: 13.15 %
Elongation Index: 11.51 %
Combined Flakiness & Elongation Index: 25 %

The tested sample is found to be Satisfactory as it meets the requirements of MORTH specification/Project Requirement

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-10

M/s. NANDI CONSULTANTS * SHIMOGA *

Checked By:

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD

Name of Client: Bruhat Bangalore Mahanagara Palike

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name of Contractor: SRI SAI CONSTRUCTION

Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Job Code: 003-22-000009

Source of sample Tested at site

Layer: GSB

Date of testing: 04.07.2022

Max.Dry Density (S) (g/cc)	2.20
Optium Moisture Content (%)	7.50
Bulk Density of Sand (Q)(g/cc)	1.35
Wt. of Sand in Cones (A) gms	870

DETERMINATION OF WET DENSITY

Test Holes No's	1	2	3	4	5
Location/Land Mark	Ambedkar Park Beside road	Ambedkar Park Beside road	Ambedkar Park Beside road	Amba Bavani Road, Sashank Florente	Amba Bavani Road, Sashank Florente
Chainage	28.9	60.4	97.2	65.6	98.7
Wt.of Wet material from hole (gm) (B)	10324	10268	10279	10272	10315
Wt.of Cylinder+Sand before pouring (gm) (c)	16850	16850	16850	16850	16850
Wt.of Cylinder+Sand after pouring (gm) (D)	6526	6582	6571	6578	6535
Wt.of Sand in Hole & Cone (gm) (E)	6807	6811	6860	6815	6842
Wt.of Sand in Hole (gm) (F=E-A)	5937	5941	5990	5945	5972
Volume of Sand in Hole (G=F/Q)	4398	4401	4437	4404	4424
Wet Density of Material (g/cc) (H=B/G)	2.35	2.33	2.32	2.33	2.33
Moisture Content (%)	7.5	7.5	7	8	7

DETERMINATION OF DRY DENSITY

Field dry Density (g/cc)	2.18	2.17	2.17	2.16	2.18
Field compaction achieved (%)	99.26	98.66	98.41	98.17	99.06
Required Compaction (%)	98.00	98.00	98.00	98.00	98.00

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

Checked By

M/S. NANDI CONSULTANTS SHIMOGA

Nandi Consultants

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

TEST REPORT OF DETERMINATION OF RATE OF SPREAD OF PRIMER COAT

Name of Client: Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION

Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Chainage/Location /Land Mark: Sample collected & Tested at site (Munivenkatappa Layout, 1st Cross)

Date of testing: 07-Jul-22

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	mt	0.2*0.2	0.2*0.2	0.2*0.2
Area of Plate (a)	Sq.m	0.04	0.04	0.04
Initial Wt of empty Plate (b)	Kg	0.200	0.200	0.200
Final weight of plate after application of prime /Tack Coat (c)	Kg	0.225	0.224	0.224
Weight of Prime/Tack Coat (d=c-b)	Kg	0.0247	0.0242	0.0243
Rate of spread of Prime/tack coat	kg/Sq.m	0.617	0.604	0.607
Average	**kg/Sq.m**	**0.609**		
Specified Limit	**kg/Sq.m**	**0.60 Kg/sq.m for Prime coat**		

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

Contractor/Contractor Representative

Client(AE/AEE/EE)

PMC

M/s. NANDI CONSULTANTS SHIMOGA

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORT OF DETERMINATION OF RATE OF SPREAD OF PRIMER COAT

Name of Client: Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 08

Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION

Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204

Chainage/Location /Land Mark: Sample collected & Tested at site (AlHajSyedYakhub Sab Layout subcross)

Date of testing: 13-Jul-22

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	mt	0.2*0.2	0.2*0.2	0.2*0.2
Area of Plate (a)	Sq.m	0.04	0.04	0.04
Initial Wt of empty Plate (b)	Kg	0.200	0.200	0.200
Final weight of plate after application of prime /Tack Coat (c)	Kg	0.224	0.225	0.225
Weight of Prime/Tack Coat (d=c-b)	Kg	0.0245	0.0248	0.0251
Rate of spread of Prime/tack coat	kg/Sq.m	0.612	0.619	0.627
Average	**kg/Sq.m**	**0.619**		
Specified Limit	**kg/Sq.m**	**0.60 Kg/sq.m for Prime coat**		

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

Contractor/Contractor Representative

Client(AE/AEE/EE)

M/S. NANDI CONSULTANTS PMC

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORT OF BITUMEN CONTENT & GRADATION FOR DENSE BITUMINOUS MACADAM

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 08.07.2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Munivenkatappa Layout, 2nd Main)
Date of testing: 08.07.2022
Type of Mix: Dense Bituminous Macadam

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for DBM Grade II (50-75mm) Bitumen Content 4.5 min VG-30
2. Weight of Mixture after Test, gm	477.10	
3. Weight of Bitumen Extracted, gm	22.9	
4. Bitumen content in %	4.58	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 477.1 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500-10
37.5	0	0.00	0.00	100.00	100
26.5	28.00	5.87	5.87	94.13	90 - 100
19	77.80	16.31	22.18	77.82	71-95
13.2	67.20	14.09	36.26	63.74	56-80
4.75	63.20	13.25	49.51	50.49	38-54
2.36	58.40	12.24	61.75	38.25	28-42
0.3	92.50	19.39	81.14	18.86	7-21
0.075	66.10	13.85	94.99	5.01	2-8

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/s. NANDI CONSULTANTS * SHIMOGA *

Contractor/Contractor Representative

PMC 9880770762, 9980120007

Client(AE/AEE/EE)

Nandi Consultants
1st Main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.

Nandi Consultants

TEST REPORT OF BITUMEN CONTENT & GRADATION FOR DENSE BITUMINOUS MACADAM

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 11.07.2022
Chainage/Location /Land Mark: Sample collected & Tested at site (High Tension Wire Road, Behind Masjid)
Date of testing: 11.07.2022
Type of Mix: Dense Bituminous Macadam

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for DBM Grade II (50-75mm) Bitumen Content 4.5 min VG-30
2. Weight of Mixture after Test, gm	477.00	
3. Weight of Bitumen Extracted, gm	23	
4. Bitumen content in %	4.60	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 477 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500-10
37.5	0	0.00	0.00	100.00	100
26.5	26.80	5.62	5.62	94.38	90 - 100
19	63.10	13.23	18.85	81.15	71-95
13.2	79.80	16.73	35.58	64.42	56-80
4.75	74.90	15.70	51.28	48.72	38-54
2.36	57.20	11.99	63.27	36.73	28-42
0.3	89.70	18.81	82.08	17.92	7-21
0.075	56.90	11.93	94.00	6.00	2-8

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/S. NANDI CONSULTANTS * SHIMOGA *

Contractor/Contractor Representative

PMC

Client(AE/AEE/EE)

Nandi Consultants
1st Main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

TEST REPORT OF BITUMEN CONTENT & GRADATION FOR DENSE BITUMINOUS MACADAM

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 15.07.2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Munivenkatappa Layout, 3rd Main)
Date of testing: 15.07.2022
Type of Mix: Dense Bituminous Macadam

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for DBM Grade II (50-75mm) Bitumen Content 4.5 min VG-30
2. Weight of Mixture after Test, gm	477.28	
3. Weight of Bitumen Extracted, gm	22.72	
4. Bitumen content in %	4.54	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 477.28 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500-10
37.5	0	0.00	0.00	100.00	100
26.5	20.60	4.32	4.32	95.68	90 - 100
19	65.60	13.74	18.06	81.94	71-95
13.2	76.00	15.92	33.98	66.02	56-80
4.75	88.60	18.56	52.55	47.45	38-54
2.36	46.30	9.70	62.25	37.75	28-42
0.3	94.30	19.76	82.01	17.99	7-21
0.075	56.90	11.92	93.93	6.07	2-8

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/S. NANDI CONSULTANTS * SHIMOGA *

Nandi Consultants

Contractor/Contractor Representative

PMC

Client(AE/AEE/EE)

Nandi Consultants

TEST REPORT OF BITUMEN CONTENT & GRADATION FOR DENSE BITUMINOUS MACADAM

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)

Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: M/s Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 15.07.2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Amba Bavani Road, Sashank Florento)
Date of testing: 15.07.2022
Type of Mix: Dense Bituminous Macadam

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for DBM Grade II (50-75mm) Bitumen Content 4.5 min VG-30
2. Weight of Mixture after Test, gm	477.12	
3. Weight of Bitumen Extracted, gm	22.88	
4. Bitumen content in %	4.58	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 477.12 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500-10
37.5	0	0.00	0.00	100.00	100
26.5	20.60	4.32	4.32	95.68	90 - 100
19	42.00	8.80	13.12	86.88	71-95
13.2	81.70	17.12	30.24	69.76	56-80
4.75	90.00	18.86	49.11	50.89	38-54
2.36	68.20	14.29	63.40	36.60	28-42
0.3	91.00	19.07	82.47	17.53	7-21
0.075	57.60	12.07	94.55	5.45	2-8

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-106

M/s. NANDI CONSULTANTS * SHIMOGA *

Contractor/Contractor Representative

PMC 9880770762, 9980[illegible]

Client(AE/AEE/EE)

Nandi Consultants

DETERMINATION OF FLAKINESS AND ELONGATION INDEX

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of sample Collection: 14-Jul-22
Chainage/Location / Landmark: Sample collected from the site and Tested (Munivenkatappa Layout, Doddabettahalli)
Date of Testing: 14-Jul-22
Reference to IS Code: IS 2386 (Part 1) 1963(RA 2016)
Layer: BC

Size of Aggregates		Flakiness Index						Elongation Index				
Passing through IS sieves	Retained on IS sieves	Thickness gauge size	Weight of aggregate taken in each fraction	Fraction retained in the whole sample	Weight of aggregate in each fraction passing the thickness gauge.	Percent passing the gauge (100*(6/4)	Flakiness Index (7 * 5)	Length gauge size	Weight of aggregate taken in each fraction	Weight of aggregate in each fraction retained on length gauge	Percenet NOT passing the gauge (100*(11/10)	Elongation Index (5 * 12)
(mm)	(mm)	(mm)	(grams)	(Percent)	(grams)			(mm)	(grams)	(grams)		
1	2	3	4	5	6	7	8	9	10	11	12	
63	50	33.90						--				
50	40	27.00						81.00				
40	31.5	21.50						64.40				
31.5	25	16.95						--				
25	20	13.50						40.50				
20	16	10.80						32.40				
16	12.5	8.55						25.60				
12.5	10	6.75	1571	50.74	198	12.60	639.53	20.20	1571	188	11.97	607.24
10	6.3	4.89	1525	49.26	187	12.26	604.01	14.70	1525	171	11.21	552.33
		TOTAL:	3096	100	385	24.87	1243.54	TOTAL:	3096	359.00	23.18	1159.56

Flakiness Index: 12.44 %
Elongation Index: 11.60 %
Combined Flakiness & Elongation Index: 24 %

The tested sample is found to be Satisfactory as it meets the requirements of MORTH specification/Project Requirement

ನಕಾಯಿಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿಗಳ ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ ಬ.ಬ.ಮ.ಪ. ಬೆಂಗಳೂರು-

M/S. NANDI CONSULTANTS * SHIMOGA *

Checked By:

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORT FOR DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Chainage/Location /Land Mark: Sample collected & Tested at site (High Tension Wire Road, Behind Masjid
Date of testing: 21-07-2022

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	mt	0.2*0.2	0.2*0.2	0.2*0.2
Area of Plate (a)	Sq.m	0.04	0.04	0.04
Initial Wt of empty Plate (b)	Kg	0.200	0.200	0.200
Final weight of plate after application of prime /Tack Coat (c)	Kg	0.210	0.210	0.212
Weight of Prime/Tack Coat (d=c-b)	Kg	0.010	0.010	0.012
Rate of spread of Prime/tack coat	kg/Sq.m	0.257	0.255	0.293
Average	**kg/Sq.m**	**0.268**		
Specified Limit	**kg/Sq.m**	**2.5 kg per 10 sqm for Tack coat**		

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

1. Any correction in the report will make this report invalid.
2. This report without prior written approval should not be reproduced or published in full or part.

Contractor/Contractor Representative

Client(AE/AEE/EE)

M/S. NANDI CONSULTANTS * SHIMOGA * PMC

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160001

Nandi Consultants

Nandi Consultants

TEST REPORT FOR DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Chainage/Location /Land Mark: Sample collected & Tested at site (Munishwara Layout, 7th Main)
Date of testing: 22-07-2022

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	mt	0.2*0.2	0.2*0.2	0.2*0.2
Area of Plate (a)	Sq.m	0.04	0.04	0.04
Initial Wt of empty Plate (b)	Kg	0.200	0.200	0.200
Final weight of plate after application of prime /Tack Coat (c)	Kg	0.210	0.212	0.211
Weight of Prime/Tack Coat (d=c-b)	Kg	0.010	0.012	0.011
Rate of spread of Prime/tack coat	kg/Sq.m	0.260	0.300	0.277
Average	**kg/Sq.m**	**0.279**		
Specified Limit	**kg/Sq.m**	**2.5 kg per 10 sqm for Tack coat**		

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

1. Any correction in the report will make this report invalid.
2. This report without prior written approval should not be reproduced or published in full or part.

Contractor/Contractor Representative

Client(AE/AEE/EE)

M/s. NANDI CONSULTANTS BMC

Nandi Consultants

Kamala Nivasa, 1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

TEST REPORT FOR DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Chainage/Location /Land Mark: Sample collected & Tested at site (Top Root College Main Road)
Date of testing: 27-07-2022

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	mt	0.2*0.2	0.2*0.2	0.2*0.2
Area of Plate (a)	Sq m	0.04	0.04	0.04
Initial Wt of empty Plate (b)	Kg	0.200	0.200	0.200
Final weight of plate after application of prime /Tack Coat (c)	Kg	0.210	0.211	0.210
Weight of Prime/Tack Coat (d=c-b)	Kg	0.010	0.011	0.010
Rate of spread of Prime/tack coat	kg/Sq.m	0.251	0.273	0.251
Average	**kg/Sq.m**	**0.258**		
Specified Limit	**kg/Sq.m**	**2.5 kg per 10 sqm for Tack coat**		

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

1. Any correction in the report will make this report invalid.
2. This report without prior written approval should not be reproduced or published in full or part.

Contractor/Contractor Representative

Client(AE/AEE/EE)

M/S. NANDI CONSULTANTS PMC

Kamala Nivasa, 1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 19-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Rajiv Gandhi Nagara, 2nd Cross)
Date of testing: 19-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472.62	
3. Weight of Binder Extracted, gm	27.38	
4. Binder content in %	5.48	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.62 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
19	0	0.00	0.00	100.00	100
13.2	25.00	5.29	5.29	94.71	90 - 100
9.5	70.20	14.85	20.14	79.86	70-88
4.75	68.00	14.39	34.53	65.47	53-71
2.36	78.30	16.57	51.10	48.90	42-58
1.18	26.70	5.65	56.75	43.25	34-48
0.6	58.20	12.31	69.06	30.94	26-38
0.3	37.70	7.98	77.04	22.96	18-28
0.15	22.90	4.85	81.88	18.12	12-20
0.075	58.00	12.27	94.16	5.84	4-10

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/s. NANDI CONSULTANTS SHIMOGA

Contractor/Contractor Representative

PMC

Client(AE/AEE/EE)

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 23-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Attur Lake Road, in front of Vruksha Restaurant)
Date of testing: 23-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472.70	
3. Weight of Binder Extracted, gm	27.3	
4. Binder content in %	5.46	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.70 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
19	0	0.00	0.00	100.00	100
13.2	14.90	3.15	3.15	96.85	90 - 100
9.5	77.60	16.42	19.57	80.43	70-88
4.75	95.40	20.18	39.75	60.25	53-71
2.36	73.60	15.57	55.32	44.68	42-58
1.18	39.30	8.31	63.63	36.37	34-48
0.6	36.40	7.70	71.33	28.67	26-38
0.3	30.90	6.54	77.87	22.13	18-28
0.15	32.00	6.77	84.64	15.36	12-20
0.075	38.30	8.10	92.74	7.26	4-10

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-10೪

M/s. NANDI CONSULTANTS SHIMOGA

Contractor/Contractor Representative

PMC

Client(AE/AEE/EE)

Kantara Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 23-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Attur Lake Road, in front of Vruksha Restaurant)
Date of testing: 23-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472.64	
3. Weight of Binder Extracted, gm	27.36	
4. Binder content in %	5.47	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.64 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
19	0	0.00	0.00	100.00	100
13.2	24.40	5.16	5.16	94.84	90 - 100
9.5	82.60	17.48	22.64	77.36	70-88
4.75	81.40	17.22	39.86	60.14	53-71
2.36	72.10	15.25	55.12	44.88	42-58
1.18	27.60	5.84	60.96	39.04	34-48
0.6	42.20	8.93	69.88	30.12	26-38
0.3	49.20	10.41	80.29	19.71	18-28
0.15	21.10	4.46	84.76	15.24	12-20
0.075	37.90	8.02	92.78	7.22	4-10

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರ
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಬೆಂಗಳೂರು-106

M/s. NANDI CONSULTANTS SHIMOGA

Contractor/Contractor Representative

PMC

Client(AE/AEE/EE)

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 24-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (AlHajSyedYakhub Sab Layout subcross
Date of testing: 24-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472.92	
3. Weight of Binder Extracted, gm	27.08	
4. Binder content in %	5.42	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.92 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
19	0	0.00	0.00	100.00	100
13.2	20.20	4.27	4.27	95.73	90 - 100
9.5	64.70	13.68	17.95	82.05	70-88
4.75	63.50	13.43	31.38	68.62	53-71
2.36	87.50	18.50	49.88	50.12	42-58
1.18	55.60	11.76	61.64	38.36	34-48
0.6	35.40	7.49	69.12	30.88	26-38
0.3	46.00	9.73	78.85	21.15	18-28
0.15	38.20	8.08	86.93	13.07	12-20
0.075	39.10	8.27	95.20	4.80	4-10

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

Contractor/Contractor Representative

M/s. NANDI CONSULTANTS SHIMOGA

PMC

Client(AE/AEE/EE)

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 25-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Ambedkar Park Beside road)
Date of testing: 25-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500 17 Binder Content 5 4% min
2. Weight of Mixture after Test, gm	472 98	
3. Weight of Binder Extracted, gm	27 02	
4. Binder content in %	5.40	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.98 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500 17
19	0	0 00	0.00	100.00	100
13.2	19.10	4 04	4.04	95.96	90 - 100
9.5	78.70	16.64	20 68	79 32	70-88
4.75	68.40	14.46	35.14	64 86	53-71
2.36	82.90	17.53	52 67	47.33	42-58
1.18	30.60	6.47	59.14	40.86	34-48
0.6	51.30	10.85	69.98	30.02	26-38
0.3	34.30	7.25	77 23	22 77	18-28
0.15	38.80	8.20	85 44	14.56	12-20
0.075	33.70	7.13	92.56	7.44	4-10

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

ಸಹಾಯಕ ಅಯುಕ್ತರು ಆಯುಕ್ತರ
ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬೆಂಗಳೂರು-೫೬

M/s. NANDI CONSULTANTS * SHIMOGA. *

Contractor/Contractor Representative

PMC

Client(AE/AEE/EE)

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 26-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Amba Bavani Road, Sashank Florento)
Date of testing: 26-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472.96	
3. Weight of Binder Extracted, gm	27.04	
4. Binder content in %	5.41	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.96 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
19	0	0.00	0.00	100.00	100
13.2	23.80	5.03	5.03	94.97	90 - 100
9.5	86.70	18.33	23.36	76.64	70-88
4.75	95.40	20.17	43.53	56.47	53-71
2.36	35.40	7.48	51.02	48.98	42-58
1.18	54.60	11.54	62.56	37.44	34-48
0.6	46.60	9.85	72.42	27.58	26-38
0.3	31.50	6.66	79.08	20.92	18-28
0.15	27.50	5.81	84.89	15.11	12-20
0.075	35.20	7.44	92.33	7.67	4-10

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/s. NANDI CONSULTANTS * SHIMOGA. *

Contractor/Contractor Representative

PMC

Client (AE/AEE/EE)

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 27-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Amba Bavani Road, Sashank Florento)
Date of testing: 27-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472.62	
3. Weight of Binder Extracted, gm	27.38	
4. Binder content in %	5.48	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.62 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
19	0	0.00	0.00	100.00	100
13.2	24.70	5.23	5.23	94.77	90 - 100
9.5	67.40	14.26	19.49	80.51	70-88
4.75	65.80	13.92	33.41	66.59	53-71
2.36	71.10	15.04	48.45	51.55	42-58
1.18	42.40	8.97	57.42	42.58	34-48
0.6	50.40	10.66	68.09	31.91	26-38
0.3	60.90	12.89	80.97	19.03	18-28
0.15	27.20	5.76	86.73	13.27	12-20
0.075	37.20	7.87	94.60	5.40	4-10

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/S. NANDI CONSULTANTS * SHIMOGA *

Contractor/Contractor Representative

PMC

Client(AE/AEE/EE)

Kamala Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants

Nandi Consultants

TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 08
Name of Work: Restoration and Improvements of roads at MS Palya, Aishwarya Bakery road, Giridhamanagara and surrounding areas in Ward no- 03 of Yelahanka New town Sub division. (PACKAGE NO-08)
Name Contractor: SRI SAI CONSTRUCTION
Name of PMC: Nandi Consultants, 1st Main, 2nd Cross, Krushinagar, Shimoga-577204
Date of Sample Collection: 27-07-2022
Chainage/Location /Land Mark: Sample collected & Tested at site (Top Root College Main Road)
Date of testing: 27-07-2022
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472.64	
3. Weight of Binder Extracted, gm	27.36	
4. Binder content in %	5.47	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472.64 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
19	0	0.00	0.00	100.00	100
13.2	19.60	4.15	4.15	95.85	90 - 100
9.5	67.50	14.28	18.43	81.57	70-88
4.75	77.70	16.44	34.87	65.13	53-71
2.36	68.50	14.49	49.36	50.64	42-58
1.18	49.90	10.56	59.92	40.08	34-48
0.6	47.70	10.09	70.01	29.99	26-38
0.3	49.70	10.52	80.53	19.47	18-28
0.15	21.10	4.46	84.99	15.01	12-20
0.075	32.20	6.81	91.80	8.20	4-10

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

M/s. NANDI CONSULTANTS * SHIMOGA *

Contractor/Contractor Representative | PMC | Client(AE/AEE/EE)

Kalpana Nivasa,
1st main, 2nd Cross, Krushinagar, Shimoga 577204, Karnataka.
9880770762, 9980160007

Nandi Consultants